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NATIONAL MUSEUM OF WALES

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PLANT ILLUSTRATION

FROM WOODCUT TO PROCESS BLOCK

Handbook to a Temporary Exhibition, based on the Collection in the Department of Botany, July - December, 1942

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PREFACE

This Exhibition is largely drawn from the collection of botanical prints in the Department of Botany: it is designed to show how the art of plant illustration has progressed from the introduction of printing down to the present day. No exhibition of similar scope and aims seems previously to have been held in Britain. Whilst most of the plates exhibited are from books printed in England, it is believed that the Exhibition represents in broad outline the history of the art in Europe as a whole.

The Exhibition has been arranged and the catalogue prepared by Mr. A. E. Wade, Assistant Keeper in the Department of Botany, under the direction of the Keeper, Mr. H. A. Hyde.

In order to facilitate comparison the prints are grouped primarily according to the various printing processes employed. The groups are arranged in historical sequence, with the exception that, as wood cutting and wood engraving though widely separated chronologically are very closely related in their nature, they have been placed together in the gallery. As a rule the arrangement within each group is also chronological, except that where a particular publication extended over many years the prints from it have been placed together.

A number of books of special interest for their illustrations are exhibited.

Throughout the centuries plant illustrations have been made and printed primarily for a utilitarian purpose: to enable botanists to recognise their plants. This Exhibition amply proves however, that the results have been far from negligible from the aesthetic point of view also.

The Council expresses its indebtedness to the Honourable Society of Cymmrodorion whose donation of a large collection of botanical plates, believed to have been formed by the Welsh sculptor, Joseph Edwards (1814-82), made this Exhibition possible. Thanks are also due to Miss Agnes Miller Parker (Mrs. W. McCance) for the donation of her wood-engraving "Tree Fruits," to Mr. Russell Leslie for the loan of wood engravings by himself, to the National Library of Wales for the loan of books, and to the Council of the Linnean Society of London for the loan of the set of reproductions of drawings by Hans Weiditz.

Although the collection of prints in the Department of Botany numbers over 1,500 items and is fairly representative of the art of botanical illustration, numerous gaps still remain, and the Department moreover lacks a great many illustrated works which would facilitate its work on the flora of Wales in relation to that of the world as a whole; donations both of isolated prints and of complete volumes of plates would therefore, be very welcome.

CYRIL FOX,
Director.

July, 1942.

INTRODUCTION

WOODCUTS. The art of botanical illustration very considerably antedates the introduction of printing: even a thousand years earlier, as is evident from illustrated MSS still extant, plant drawings of considerable artistic merit were being made. These ancient drawings were, however, copied and recopied by scribes who often lacked both scientific knowledge and artistic ability. It was these degraded copies, which had completely lost touch with nature, that were reproduced as woodcuts, and possibly as cuts in metal, to illustrate the first botanical books to be printed, notably the *Herbarium of Apuleius Platonicus* (1481) and the *Latin Herbarius* (1484, 1499). (See Nos. 2-3.)

Crude as many of these early woodcuts are, the decorative quality which they frequently possess suggests that the draughtsman treated illustration as an embellishment of the text, and that he intentionally gave a conventional rendering which did no more than indicate certain features. This tendency is particularly noticeable in many of the woodcuts in the *Ortus sanitatis* (1491). (See No. 5.) Most of the woodcuts in this work are inferior copies of those in the *Herbarius zu Teutsch* (see No. 4) which had been published six years before. The figures in the latter are the first printed ones to show any evidence of having been drawn direct from nature and the work is therefore an important landmark in the history of the art.

A marked improvement in botanical illustration came about by indirect means. Heretofore the ablest artists had kept aloof from woodcutting but now Albrecht Dürer (1471-1528) and some of his foremost contemporaries began to practise it, to the immediate advantage of book illustration generally. Leonardo da Vinci (1452-1519) moreover had created exquisitely faithful drawings of plants. These great artists, inspired as they were by a quasi-religious or metaphysical belief in truth to nature, had a profound influence on botanical illustration; but it was left to Hans Weiditz, an artist of the same school as Dürer and inspired by the same belief, to open the new era with his drawings made from nature for Brunfels' *Herbarum vivae eicones* (Living Portraits of Plants) which was published in 1530. (See Case A and No. 6.) The woodcuts in this work are so incomparably better than the text that it may truly be said that the art of plant illustration was in advance of the new science of botany. The artist of the time was in fact a better botanist than the medical herbalist, who was chiefly interested in the virtues of plants.

With the publication in 1542 of Leonart Fuchs's herbal *De historia stirpium* (No. 8) a new level of achievement was reached.

Whereas the woodcuts in Brunfels' herbal were straightforward studies from nature, many of those in this work exhibit a quality which places them in the category of decorative illustration, and yet there is no undue departure from nature. It is this synthesis of book decoration and illustration of subject matter which accounts for the esteem in which these woodcuts are held today by botanist and artist alike.

An octavo edition of Fuchs's herbal with smaller versions of the woodcuts was printed in 1545, and although the text was not again reprinted the figures were used again and again during the following two hundred years and more to illustrate herbals by many different authors.

Among the books which thus benefited from Fuchs's woodcuts were the herbals published by Plantin of Antwerp (see Nos. 11-14), and also Johnson's two editions of Gerard (see No. 18, Case B). The same works contained among their illustrations an element derived from much older sources than Fuchs: some are known to have been copied from drawings in one of the two most important manuscripts of Dioscorides' famous Materia Medica, viz., the *Anicia Juliana Codex* of A.D. 512. Dioscorides himself wrote in the first century B.C., so some of Johnson's figures may have had an ancestry extending over sixteen hundred years.

A feature characteristic of many woodcuts in the herbals is their rectangularity of design; this is partly due to the influence of the shape of the block upon the artist, for as Mrs. Arber in her book on herbals* says, "It was impossible (for the woodcutter) to be unmindful of the boundaries of the block, when these took the form, as it were, of miniature precipices under his hand . . . . . . It is not surprising, under these circumstances, that the herbal illustrator who drew upon the block should often have been so much obsessed by its rectangularity that he accommodated his drawing to its form in a way that was unnecessary and far from realistic, though sometimes very attractive." It is also true that a block which had a pattern more or less evenly distributed over its surface would not only lend itself to easier printing, but would also fit more artistically into the printed page. The large woodcuts in the later version of Mattioli's Commentary on the Materia Medica of Dioscorides, first published in Prague in 1562, are of particular interest in this connection. Here the rectangular shape of the block has been consciously used as an element in the design (See No. 10).

* The history of the woodcut, in so far as it relates to botany, is closely bound up with the history of the herbal. The writer is indebted to Mrs. Arber's classic work (see bibliography) for much of the information used in the preparation of this section of the exhibition.

Renaissance botanists were at first concerned with plants only as sources of medicine. Interest in the study of plants for their own sake developed later: it is reflected in the drawings made by Conrad Gesner and in the woodcuts in *De plantis Epitome* of Joachim Camerarius (1586) both of which include details of flowers and seeds and such phases in the life history of plants as seedlings, and have a surprisingly modern appearance (see No. 15). This treatment of detail was certainly inspired by Valerius Cordus whose *Historia Plantarum* was published by Gesner in 1561-3. Cordus was the first botanist to draw up detailed technical descriptions of plants in a systematic form.

ENGRAVINGS ON METAL. At the close of the sixteenth century the art of wood-cutting deteriorated and copperplate engraving began to take its place. This form of printing possessed considerable advantages: the engraved line enabled the artist to express fine detail and surface texture and even to convey the suggestion of colour to a degree impossible in a woodcut; on the other hand the new process was more expensive than the old and as engraved plates had to be printed separately from the letterpress, they could not be so intimately linked to the text. Coupled with this technical development, the influx of new plants from America and the East into the gardens of the aristocracy, gave rise to the sumptuous book of fine horticultural engravings intended to appeal to the wealthy amateur. Crispian de Passe's *Hortus floridus* (1614) (see Nos. 28 and 29) is an outstanding example of this type of work.

The era of the herbal came to a close about the middle of the sixteenth century, the last work of any importance which could be included under this head being published in 1640. During the remainder of this century and the earlier part of the succeeding one there was a very marked lull in the output of botanical illustrations. A few of the relatively small number of well illustrated botanical books produced during the latter half of the seventeenth century may be seen in Case C. In none are the figures comparable with those of Crispian de Passe, nor was his supremacy threatened until the advent of George Dionysius Ehret (1708-1770), who illustrated Linnaeus' *Hortus Cliffortianus* (1737) and Trew's *Plantae Selectae* (1750-73). (See No. 34 Case C, and Nos. 36-41). The introduction of the Linnean system of classification and the publication of Linnaeus' *Genera Plantarum* and *Species Plantarum* in 1737 and 1753 respectively, undoubtedly had considerable influence on the development of botanical illustration; the need for figures of plants in which full attention had been given to the details of floral structure was imperative: the botanist could no longer be satisfied with the woodcuts in the herbals. Henceforward verbal description and pictorial illustration went almost hand in hand.

Linnaeus's artificial system was framed by its author to meet the crying need for some means of classifying the host of new plants now reaching Europe, and in this it was a tremendous success. It is not therefore, surprising to find that copper-plate engraving as a method of botanical illustration reached its zenith during what may be called the Linnean period of plant systematics. In this country the high-water mark was probably reached with Curtis's *Flora Londinensis* (1777-87). (See Nos. 47-52.) *Curtis's Botanical Magazine* (see Nos. 53-66) which was launched at about the same time and which professedly catered (and still caters) for those who grew in their gardens plants imported from abroad, set the standard for all the various magazines which had similar aims and which flourished or languished for longer or shorter periods during the nineteenth century. Sowerby's *English Botany*, the first fully illustrated British flora, began publication only a few years later. (See Nos. 67 and 68, Case D.) The work of such notable botanical artists as Ferdinand Lucas Bauer (1760-1826) and his brother Franz Andreas (1758-1840), the Welsh artist Sydenham Edwards (1769 ?-1819), Walter Hood Fitch (1817-92) and many others in this country, maintained the art of botanical illustration at a high standard throughout the nineteenth century.

WOOD ENGRAVINGS. The art of wood engraving as distinct from wood cutting was developed toward the end of the eighteenth century by Thomas Bewick (1753-1828). This artist demonstrated by his own achievements the potentialities which the new art possessed in the realm of book illustration: it was capable of reproducing detail as finely as was copper-plate engraving and it was much cheaper. Bewick engraved the blocks for Thornton's *New Family Herbal*, which was published in 1810 (see No. 19, Case B), but the new process does not appear to have come into general use for botanical purposes until about twenty years later: from then on it was used freely not only for text-books but also for some floras, notably the illustrated edition of Bentham's *Handbook of the British Flora*, first published in 1865. (See No. 20, Case B.)

Wood engraving ceased to be in general use for book illustration at the end of the nineteenth century, but it has in recent years been revived for the illustration of popular books on horticulture and natural history. The wood engravings of today do not in a botanical sense challenge comparison with the figures in more serious works: they aim not so much at affording a means of identification as at giving a general idea of the plant depicted: they fall in fact into the category of book decoration rather than that of scientific illustration. (See Nos. 24-26.)

LITHOGRAPHY began to be employed on the continent during the early years of the nineteenth century. The first

botanical work of importance for which it was used in this country seems to have been Knowles and Westcott's *Floral Cabinet* of 1837 (see No. 116.), after which date the process gradually superseded copper and steel engraving for botanical illustration and is still in use.

OTHER NON-MECHANICAL METHODS OF ILLUSTRATION. Down to about the end of the nineteenth century, woodcuts, wood engravings, line engravings on metal and lithographs make up the bulk of botanical illustrations as of book illustration generally. Meanwhile, three other methods had at various times been used with conspicuous success if only by isolated workers: mezzotint engraving, stipple engraving and nature printing. The cost of mezzotint engraving must in general have been prohibitive; apparently only two botanical works were so illustrated, in this country at least (see Nos. 95-98). The high degree of technical skill required for stipple engraving doubtless precluded its general use; among botanical artists it is especially associated with the work of P. J. Redouté (1759-1840) (see Nos. 99-109.) Nature printing was the name given by its inventor and only exponent, Henry Bradbury, to the interesting and novel method by which the actual plant depicted is used in making the plate. (See Nos. 137-9, Case E.)

PHOTO-MECHANICAL REPRODUCTION. With the exception of some lithographic reproduction, the entire output of botanical illustration of the present day is produced by one or other of the photo-mechanical processes which began to replace engraving on metal or wood about 1880. Examples are exhibited in the north vestibule (Nos. 140-149).

It is inevitable that botanical illustrations produced by photo-mechanical means should lack the aesthetic appeal of those made by the older methods. A reproduction of an artist's drawing as a woodcut or an engraving is the interpretation of its subject in a different medium: it possesses its own artistic and aesthetic qualities, and reflects the personal outlook of the engraver. The process block on the other hand represents merely the closest imitation of the original which the block-maker is able to produce, and the process print therefore has no artistic or aesthetic qualities of its own whatever. But against this loss must be placed the accuracy assured by the camera: in the past the draughtsman's intentions must often have been but imperfectly interpreted by the wood-cutter or the engraver; even de Passe's drawings, though the engravings from them were made by himself or under his own eye, must in this respect have suffered by their translation into another medium. If we can no longer rejoice over modern reproductions as works of art we can be glad of them as indispensable tools for scientific study.

CATALOGUE

With the exception of the woodcuts and the earlier engravings the botanical and English names given are those used on the plates or in the publications from which they were taken.

*WOODCUTS

1a. WOODCUT OF PLANTS from *Das pûch der natur* (The book of nature) by Konrad von Megenberg, printed in Augsburg in 1475.

Das pûch der natur was based on a German translation from a Latin original compiled in the thirteenth century by a pupil of Albertus Magnus, and contains the earliest botanical woodcuts known to exist. At whatever date the original drawings were made, those on which the cuts were based probably had not been copied and recopied so many times as those in the *Herbarium* of Apuleius Platonicus (No. 2).

1b. WOODCUT OF HERBS AND TREES from the translation of *Liber de proprietatibus rerum* (Book on the properties of things) by Wynkyn de Worde, ?1495, probably the earliest English printed book containing information of a botanical character.

2a. "*Nymfea,*" Waterlily. A drawing in a ninth century manuscript of *Herbarium Apuleii Platonici*, *Codex Casinensis* 97.

2b. "*Nymphea,*" Waterlily. Woodcut from the printed version of *Herbarium Apuleii Platonici*, Rome, ?1481.

The Herbarium of *Apuleius Platonicus*, one of the earliest printed books to which the term herbal was applied, was based on a Codex (*Casinensis* 97) which was copied in the ninth century but which was derived ultimately from an original believed to have been written in the fifth. Before being printed the illustrations must therefore have been copied from manuscript to manuscript for hundreds of years, in the course of which they lost touch with nature, becoming merely decorative and formal. A reproduction of one of the drawings in *Codex Casinensis* 97 is shown alongside the woodcut of the same figure, as printed in the *Herbarium*.

2c. "*Plantago,*" Plantain. Woodcut from *Herbarium Apuleii Platonici*, Rome, ?1481.

2d. "*Artemisia,*" Wormwood. Woodcut from *Herbarium Apuleii Platonici*, Rome, ?1481.

* The woodcuts, with the exception of those in Nos. 16 and 18, are represented by photographic reproductions.

3a. "*Lilium*," Lily. Woodcut from the *Latin Herbarius*, Mainz, 1484.

As the majority of the authorities quoted in the *Latin Herbarius* wrote before 1300 the work itself is believed to have been based on a manuscript of that date or before. The woodcuts are bold and decorative, but, although they are better than those of the *Herbarium* of Apuleius, they show little attempt at realism and the subjects are often quite unrecognisable. This want of realism is made evident in the woodcut of the lily by the lack of organic continuity between leaves and stem and by the general approach to decorative symmetry.

3b. "*Brionia*," White Bryony, *Bryonia dioica*. Woodcut from the *Latin Herbarius*, Mainz, 1484.

The decorative form recalls the plant designs used in the Middle Ages to enrich the borders of manuscripts.

3c. "*Nenufar*," Waterlily. Woodcut from the *Latin Herbarius*, Venice, 1499.

The figures in this (second) edition of the *Latin Herbarius* are slightly more naturalistic. The symmetrical arrangement, the diagrammatically emphasised leaf bases on the rhizome and the want of correct proportion between leaf stalk and leaves in this figure of the water lily should all be noted. The draughtsman's aim was to give, not a representation of the plant as it was, but a conventional rendering which indicated certain distinctive features.

3d. "*Ireos vel Iris*," probably Yellow Flag, *Iris Pseudacorus*. Woodcut from the *Latin Herbarius*, Venice, 1499.

4a. FLAX DODDER, *Cuscuta epilinum*. Woodcut from the *Herbarius zu Teutsch*, Mainz, 1485.

The illustrations in the *Herbarius zu Teutsch* are often remarkable for their beauty and, as compared with those of the *Latin Herbarius*, printed in the previous year, show greater realism. They were copied and recopied from book to book and thus form the basis of nearly all the plant figures of the following fifty years.

4b. YELLOW FLAG, *Iris Pseudacorus*. Woodcut from the *Herbarius zu Teutsch*, Mainz, 1485.

Compare with the figure of the same plant in the *Latin Herbarius*, which followed a few years later. (No. 3d.)

5a. FLAX DODDER, *Cuscuta epilinum*. Woodcut from *Ortus sanitatis*, Mainz, 1491.

The *Ortus sanitatis* or Garden of Health, printed by Jacob Meydenbach in 1491 is in part a modified Latin translation of the *Herbarius zu Teutsch* to which accounts of birds and animals and further matter relating to plants have been added. About one-third of the figures, such as the "Botris" and the lime tree, are new, the remainder being copied on a reduced scale from the *Herbarius zu Teutsch*. This woodcut of the Flax Dodder is one such copy and should be compared with the original. (See No. 4a.)

5b. "*Botris*." Woodcut from *Ortus sanitatis*, Mainz, 1491.

A complete reversion to conventional rendering and symmetry is evident. The use of a black background with the stalks and leaves forming a contrast in white is an interesting feature.

5c. "*Tilia*," Lime tree with birds. Woodcut from *Ortus sanitatis*, Mainz, 1491.

The artist, by completely disregarding proportion, has been able to show in one and the same figure the shape of the leaves, the form of the trunk and the grass growing beneath.

6a. WHITE WATERLILY, *Nymphaea alba*. Reduced reproduction of the woodcut in Brunfels, *Herbarum vivae eicones*, vol. 1, Strasburg, 1530.

The drawings for the woodcuts in Otto von Brunfels' work were made by Hans Weiditz. (See Case A.) The title—Living Portraits of Plants—indicates the distinctive feature of the work: the artist went direct to nature instead of relying, as authors had done for centuries, upon the work of earlier draughtsmen. The illustrations are thus a notable advance on any woodcuts previously produced and represent the first flowering of Renaissance botany. Brunfels' figure of the Waterlily should be compared with that of the *Latin Herbarius* of 1499 (No. 3c.).

6b. PASQUE FLOWER, *Anemone Pulsatilla*. Reduced reproduction of the woodcut in Brunfels, *Herbarum vivae eicones*, vol. 1, Strasburg, 1530.

Case A.

7. REPRODUCTIONS OF WATER COLOUR DRAWINGS BY HANS WEIDITZ.

The original drawings were made by Weiditz in 1529, at the request of the book publisher Schott of Basle, as illustrations to Otto Brunfels' *Herbarum vivae eicones*. Text and drawings were prepared simultaneously at high pressure and the first part of the book was published in 1530. Hans Weiditz (fl. 1516-1536), was an artist of the same school as Dürer, to whom some of Weiditz's work was formerly attributed. Both appear to have had the same quasi-religious attitude to "Nature" which inspired the Renaissance generally. It is therefore, not a coincidence that Brunfels' herbal, containing woodcuts after Weiditz's drawings, marks a new departure in plant illustration. The keynote of "Living portraits of plants" is truth to nature. Weiditz, however, for all his sureness of touch and loving attention to detail, carried truth to nature too far: he depicted, not the botanist's ideal but the actual plant in front of him with all its accidental peculiarities and imperfections.

Weiditz's drawings were acquired by Felix Platter of Basle (1536-1614) and incorporated into his collection of dried plants, where they remained, their very existence unsuspected, until 1930. The facsimiles here exhibited form part of a series published, together with a descriptive account, by Walther Rytz under the title *Pflanzenaquarelle des Hans Weiditz* (Bern, 1936).

Lent by the Linnean Society of London.

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8. **Traveller's Joy**, *Clematis Vitalba.* Reduced reproduction of the woodcut in Fuchs, *De historia stirpium*, Basle, 1542.

Leonhart Fuchs's *De historia stirpium* deals with about four hundred plants native to Germany and one hundred foreign thereto. The illustrations, all of which appear to be original, reach as high a level as those in Brunfels' herbal, if not higher, an achievement which was due in part to an ideal degree of collaboration between the author and his staff of draughtsmen: Albrecht Meyer who drew the plants from nature, Heinrich Füllmaurer who copied the drawings on to wood blocks and Veit Rudolf Speckle the engraver, who did the actual cutting.

The figures are on a large scale, and the plants are frequently shown curved in order to fit them into the space; indeed they are often made to form an all-over pattern. The decorative quality of the cuts is well exemplified by the figure of Traveller's Joy exhibited.

9a. **Wild Strawberry**, *Fragaria vesca.* Woodcut from Bock, *Kreuter Bůch*, Strasburg, 1546.

Jerome Bock's great work was the *New Kreütter Bůch* printed at Strasburg by Wendel Rihel in 1539: this, the first edition was without illustrations, but subsequent editions (that of 1546 being the second) contained many woodcuts. Some of the figures are founded upon those of Brunfels and Fuchs, but others were specially drawn and engraved by David Kandel, whose drawings are markedly original and combine decorative quality with naturalism.

9b. **Wintergreen**, *Pyrola sp.* Woodcut from Bock, *Kreuter Bůch*, Strasburg, 1546.

10a. **Red Poppy**, *Papaver Rhoeas.* Woodcut from Mattioli, *Commentarii in sex libros Pedacii Dioscoridis Anazarbei, de Medica materia* (Commentary on the materia medica of Dioscorides), Venice, 1565.

Pierandrea Mattioli's commentaries on the "*materia medica*" of Dioscorides reached nearly seventy editions. The early versions from 1544 onwards had small illustrations but later editions, with superb large-scale figures, were published, first in Prague in 1562 and again in Venice in 1565.

The figures differ in style from those of previous herbals, and are notable for the degree to which such details as veins and hairs are worked out, and for the rich massing of foliage, fruit and flowers. Mattioli's figures like those of Fuchs had a prolonged existence: they were used to illustrate a French herbal so late as 1766, more than two hundred years after their first appearance.

10b. **Apple**, *Pyrus Malus.* Woodcut from Mattioli, *Commentarii*, Venice, 1565.

The conventional inclusion of flowers and fruit on the same branch is noteworthy.

11a. *Sempervivum arboreum.* Woodcut from de l'Ecluse, *Rariorum aliquot stirpium per Hispanias* . . . . Antwerp, 1576.

Charles de l'Ecluse made an expedition to Spain and Portugal, bringing back two hundred new species which he described in this book, published by Plantin. Whilst it was awaiting publication, some of the blocks, which had been specially prepared for it, were used to illustrate a work by Dodoens. De l'Ecluse often increased the botanical value of his figures by including fruiting as well as flowering stages. His woodcuts in general are considered to be the best in the Plantin collection.

Christophe Plantin (1514-1588), printer, of Antwerp, acted as publisher for the three Low Country botanists, de l'Ecluse, de l'Obel and Dodoens. The blocks which were made for these authors formed the major part of the collection assembled by Plantin, and all three writers drew on this common stock. The blocks were also used to illustrate Johnson's editions of Gerard's herbal (1633 and 1636) thus becoming familiar to English readers. The general popularity of the Plantin figures is shown by the frequency with which they were used or copied by other publishers.

11b. JOB'S TEARS, *Coix Lachryma-Jobi.* Woodcut from de l'Ecluse, *Rariorum aliquot stirpium per Hispanias* . . . . Antwerp, 1576.

12a. YELLOW WATERLILY, *Nuphar lutea.* Woodcut from de l'Obel, *Kruydtboeck*, Antwerp, 1581.

Mathias de l'Obel's *Kruydtboeck*, which appeared from the Plantin Press at Antwerp, is a Flemish translation of his chief botanical work, the *Stirpium adversaria nova* (Memoranda of plants, London, 1570) an enlarged edition of which had already been published by Plantin in 1576 under the title *Plantarum seu stirpium historia.*

The woodcuts are typical examples from Christophe Plantin's stock collection.

12b. MISTLETOE, *Viscum album.* Woodcut from de l'Obel, *Kruydtboeck*, Antwerp, 1581.

Case B.

13. MATHIAS DE L'OBEL, *Plantarum seu stirpium icones*, Antwerp, 1581.

This book of woodcuts without text was published by Plantin: it contains the figures used to illustrate de l'Obel's *Plantarum seu stirpium historia* (1576). (See No. 12.) The woodcuts represent the major part of the Plantin collection.

14a. WINTER ACONITE, *Eranthis hyemalis.* Woodcut from Dodoens, *Stirpium historiae pemptades sex, sive libri XXX*, Antwerp, 1583.

The book from which this and the following figure were taken contains Rembert Dodoens' collected work, and was published by Christophe Plantin. Most of the woodcuts were originally made for the octavo edition (1545) of Fuchs' herbal and had already been used by Dodoens for his Flemish herbal *Crüÿdeboeck* (Antwerp, Van der Loe, 1554). However, Dodoens inserted a number of new figures.

14b. CAPER, *Capparis spinosa.* Woodcut from Dodoens, *Stirpium historiae pemptades sex*, Antwerp, 1583.

15a. PASQUE FLOWER, *Anemone Pulsatilla.* Woodcut from Camerarius, *De plantis Epitome*, Frankfurt-on-Main, 1586.

The *De plantis Epitome* of Joachim Camerarius is an edition of Mattioli's *Commentarii.* The figures include studies of developmental phases and detailed analyses of floral characters of the plants concerned. Camerarius acquired the drawings and blocks which Konrad Gesner had gathered together but had been unable to use, and employed these, together with blocks of his own, to illustrate works of which he was the author or editor. Compare this woodcut of the Pasque flower with that from Brunfels' herbal (No. 6b).

15b. EUROPEAN CYCLAMEN, *Cyclamen europaeum.* Woodcut from Camerarius, *De plantis Epitome*, Frankfurt-on-Main, 1586.

Case B (continued).

16. JOHN GERARD, *The Herball or Generall Historie of Plantes*, 1597.

Gerard's herbal was published in London by John Norton: it is probably the best kown of the English herbals, but Gerard himself deserved little of the fame it brought him. The text is for the most part a translation of Dodoens' *Pemptades* by a certain Dr. Priest who died before his work could be published. This translation was adopted and completed by Gerard and its arrangement altered from Dodoens' to that of de l'Obel, and the whole published as his own work. The woodcuts, with the exception of fourteen, are those which had been used by Tabernaemontanus in his *Eicones plantarum* of 1590 and which were copied from Bock, Fuchs, Mattioli, Dodoens, de l'Ecluse, and de l'Obel.

17. JOHN PARKINSON, *Paradisi in Sole Paradisus Terrestris*, London, 1629. Facsimile reprint, London, 1904.

The title of this work is a pun on the author's name " Park in sun." The subtitle reads " A Garden of all sortes of pleasant flowers which our English ayre will permit to be noursed-up . . . . " The book contains a proportion of new figures but many are copied from previous writers. The woodcuts were made in this country by Switzer. Artistically they are poor, and the innovation of including a number of copies on one large woodcut is not very successful.

Donor: The City of Cardiff, Public Libraries.

18. *Gerard's Herball or Generall Historie of Plantes* enlarged and emended by Thomas Johnson, London, 1633.

Johnson's edition of Gerard's herbal was illustrated with a set of 2,766 blocks, which had been used previously in books published by Plantin in Antwerp.

WOOD ENGRAVINGS

19. ROBERT JOHN THORNTON, *A New Family Herbal.* Second edition, London, 1814.

The two hundred and fifty wood engravings illustrating this book were executed by Thomas Bewick (1753-1828) after drawings by Henderson. Henderson drew some of the plates for Thornton's *Temple of Flora*, 1799. (See No. 97.)

Lent by the National Library of Wales.

20. GEORGE BENTHAM, *Handbook of the British Flora*, Illustrated edition, London, 1865.

The wood engravings in this work, made after the drawings by Walter Hood Fitch (1817-92), have long been appreciated by amateur botanists. With additions after drawings by W. G. Smith, they are still in use at the present day, forming a companion volume to the current edition of Bentham and Hooker's *British Flora* (Ashford, Kent, 1924). Fitch who was the best known botanical artist of his day, made illustrations for a large number of other botanical and horticultural works including the *Botanical Magazine*. (See also Nos. 66 and 122-128.)

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21. OAK, *Quercus Robur.* Wood engraving by R. Berthold after a drawing by Ernst Heyn (b. Leipzig, 1841). From Kerner and Oliver, *Natural History of Plants*, London, 1894-5.

22a. MANGROVE TREE, *Rhizophora Mangle.* Wood engraving from Kerner and Oliver, *Natural History of Plants*, London, 1894-5.

22b. WALNUT, *Juglans regia.* Wood engraving from Kerner and Oliver, *Natural History of Plants*, London, 1894-5.

23. CAMELLIA-FLOWERED STUARTIA, *Stuartia Pseudo-camellia.* Wood engraving by W. G. Smith from the *Gardeners' Chronicle*, 1916.

Worthington George Smith (1835-1917) abandoned architecture for botany, becoming principal artist to the *Gardeners' Chronicle* and a well-known mycologist. (See also No. 129.)

24. TREE FRUITS. Wood engraving by Agnes Miller Parker (Mrs. William McCance) to illustrate *Through the Woods* by H. E. Bates, London, 1936.

Donor: The Artist.

25. CHRISTMAS ROSE, *Helleborus niger.* Wood engraving by Russell Leslie to illustrate his *Alpines I Have Known*, London, 1942.

Lent by the Artist.

26a. ERYNGO, *Eryngium glaciale.* Wood engraving by Russell Leslie to illustrate his *Alpines I Have Known*, London, 1942.

Lent by the Artist.

26b. ROCK PURSLANE, *Lewisia Howellii.* Wood engraving by Russell Leslie to illustrate his *Alpines I Have Known*, London, 1942.
Lent by the Artist.

ETCHINGS

27a. "*Chondrilla*," *Chondrilla juncea.* Reproduction of an etching in Columna, *Phytobasanos*, Naples, 1592.

Fabius Columna's *Phytobasanos* is believed to be the earliest botanical book in which copper-plate etchings of plants were used. The figures, which may have been drawn and etched by Columna himself, are accurate and pleasing, and, like the contemporary woodcuts of Gesner and Camerarius (cf. No. 15) often show details of flower and fruit separately.

27b. BLACK DOG-BANE, *Vincetoxicum nigrum.* Reproduction of an etching in Columna, *Phytobasanos*, Naples, 1592.

LINE ENGRAVINGS*

28. EUROPEAN CYCLAMEN, *Cyclamen europaeum.* Reproduction of an engraving in Crispian de Passe, *Hortus floridus* (Garden of Flowers), Arnheim, 1614.

The copper plates in the *Hortus floridus*, which are remarkable for their delicacy of treatment, were engraved by Crispian de Passe (1589-1667) himself with the assistance of his two brothers. The artists were especially successful with the bulbous and tuberous plants which have long been a speciality of Holland. Many of the plants are shown growing in situ and on a low eye-level, so that the flowers stand out against the sky.
An English edition was published in Utrecht in 1615, and in 1929 a modern edition was printed in London with the plates in facsimile.

29. MARTAGON LILY, *Lilium Martagon.* Reproduction of an engraving in Crispian de Passe, *Hortus floridus*, Arnheim, 1614.

Case C.

30. HEINRICH VAN RHEEDE TOT DRAAKENSTEIN, *Hortus indicus malabaricus.* Amsterdam, 1678-1703.

This, one of the most celebrated of pre-Linnean books, was illustrated by engravings after drawings by Rheede tot Draakenstein. Though Rheede is always quoted as the author, the whole of the text appears to have been written for him by other botanists. The work is in twelve volumes of which the one exhibited is the first. The engravings, whilst not exhibiting the degree of finish seen in other works, nevertheless possess an interesting calligraphic quality.
Lent by the National Library of Wales.

* Unless otherwise stated the engravings and lithographs exhibited form part of the collection presented by the Honourable Society of Cymmrodorion.

CONNEMARA PUBLIC LIBRARY

31. ROBERT MORISON, *Plantarum Historiae Universalis Oxoniensis*, London, 1680-99.

Morison (1620-83), one of the founders of British Botany, was the first Professor of Botany in the University of Oxford, being appointed in 1669. He did not live to complete this work, the third part—the one exhibited—being edited by Jacob Bobart the younger, who was superintendent of the Oxford Physic Garden in 1680.

The plates in this work were for the most part drawn and engraved by Michael Burghers, a few others being by F. H. Van Houe. Burghers, a Dutchman, settled in England about 1672, residing chiefly at Oxford, where he was employed by booksellers and by the University. He is well known for his engravings of antiquities and abbeys.

The somewhat unpleasing effect produced by the illustrations is due to the inclusion of a number of figures on one plate: in spite of this economy (for such it doubtless was) Morison's work proved to be a costly undertaking.

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32. ROUGH SOW-THISTLE, *Sonchus asper*. Engraving from Cupani, *Pamphyton siculum*, Palermo, 1713.

A typical example of eighteenth-century botanical illustration. The *Pamphyton siculum* is a rare book of plates without letterpress.

Purchased.

Case C (continued).

33. SEBASTIAN VAILLANT, *Botanicon Parisiense* (An enumeration of the plants found in the environs of Paris), Leyden and Amsterdam, 1727.

The copper-plate engravings are after drawing by Claude Aubriet (1665-1742), an artist who accompanied the great botanist Tournefort to the Levant, and on his return was made by Louis XIV painter at the Royal Botanic Garden.

Lent by the National Library of Wales.

34. CAROLUS LINNAEUS, *Hortus Cliffortianus*, Amsterdam, 1737.

The engravings are by Jan Wandelaar (b. Amsterdam c. 1691; d. Leyden, 1759) after drawings by George Dionysius Ehret (1708-1770). The plastic quality (relief) of these illustrations is quite unusual. (See also Nos. 36-41.)

Lent by the National Library of Wales.

35a. VALERIAN, *Valeriana officinalis*. Engraving by Elizabeth Blackwell (c. 1700-1758) from her work *A curious herbal*, London, 1737-9.

Elizabeth Blackwell's herbal contains 500 plates, all of which were drawn, engraved and coloured by the author. As the plates were intended to be coloured by hand the engraving was reduced to an outline, with a minimum of shading.

35b. STINKING HELLEBORE, *Helleborus foetidus.* Engraving from Trew, *Herbarium Blackwellianum*, Nuremberg, 1750-73. An emended edition of Elizabeth Blackwell's *A curious herbal.*

Trew engaged Nicolaus Friedrich Eisenberger to copy Mrs. Blackwell's plates for the German edition. He also substituted in place of the originals, some entirely new figures, which are a marked improvement on those of the original work.

Purchased.

36. DUCK'S FOOT, *Podophyllum peltatum.* Engraving after a drawing by Ehret, from Trew, *Plantae selectae*, Nuremberg, 1750-73.

The drawings for the *Plantae selectae*, which were begun soon after Ehret's arrival in London about 1740, were made from plants in English gardens. Three hundred drawings were done in all, of which 100 were published in Nuremberg.

37. NIGHT-FLOWERING CACTUS, *Cereus grandiflorus.* Engraving after a drawing by Ehret. From Trew, *Plantae selectae*, Nuremberg, 1750-73.

Cf. mezzotint engraving of the same plant (No. 95.)

38. PAPAYA, *Carica Papaya.* Engraving after a drawing by Ehret. From Trew, *Plantae selectae*, Nuremberg, 1750-73.

39. AMARYLLIS, *Amaryllis sp.* Engraving after a drawing by Ehret. From Trew, *Plantae selectae*, Nuremberg, 1750-73.

40. SPIDER LILY, *Hymenocallis littoralis.* Engraving after a drawing by Ehret. From Trew, *Plantae selectae*, Nuremberg, 1750-73.

41. AMERICAN TURK'S-CAP LILY, *Lilium superbum.* Engraving after a drawing by Ehret. From Trew, *Plantae selectae*, Nuremberg, 1750-73.

Cf. mezzotint engraving of the same plant (No. 96).

42. BERMUDA BUTTERCUP, *Oxalis cernua*; and WOODSORREL, *Oxalis Acetosella.* Engraving by John Miller after a drawing by R. Lancake. From P. Miller, *Figures of .... plants described in the Gardeners' Dictionary*, London, 1760.

John Miller (Johann Sebastian Müller), draughtsman and engraver was born in Nuremberg in 1715 and settled in London in 1760 where he died about 1790. He illustrated a number of botanical works notably *An illustration of the sexual system of Linnaeus*, London, 1779-89, in which the figures have been described as faithful to nature and artistically excellent.

43. SHOOTING STAR OR AMERICAN COWSLIP, *Dodecatheon Meadia.* Engraving by John Miller after a drawing by R. Lancake. From P. Miller, *Figures of ..... plants described in the Gardeners' Dictionary*, London, 1760.

44. Globe Flower, *Trollius europaeus*. Engraving from Oeder, *Icones plantarum . . . . . Daniae et Norvegiae . . . . .* (Figures of Danish and Norwegian plants), vol. 1, Havniae, 1764.
This work which was founded by Oeder was in process of publication for over a century. In the earlier engravings the rendering of tonal values in black and white seems to have been carried to the limit set by the technique.
Purchased.

45. Viper's Bugloss, *Echium vulgare*. Engraving from Oeder, *Icones plantarum . . . . . Daniae et Norvegiae . . . . .* Vol. 3, Havniae, 1769.
Purchased.

Case D.

46. Sir Joseph Banks and Dr. Daniel Solander, *Illustrations of Australian Plants collected in* 1770 *during Captain Cook's voyage round the world*, London, 1900-1905.
Banks and Solander both accompanied Cook on his famous voyage. They took with them also Sydney Parkinson, who went as draughtsman and made 955 drawings (including 675 sketches and 280 finished studies) of plants and animals observed on the voyage. On their return and the death of Parkinson in 1771 many of the drawings were finished by other artists. The engravings were probably made for the most part by D. McKenzie, an outstanding artist in his day. It had been hoped that publication would begin in 1772. In the event 742 plates were engraved between 1773 and 1781 but it was not until after a delay of over a century that any were printed: then in 1900-1905 the Trustees of the British Museum published 328 of them in the form of lithographed reproductions, a method involving some loss of quality.
The drawing for the engraving shown was made by Frederick Polydore Nodder (fl. 1777-1800), who was Botanic Painter to Queen Caroline and exhibited flower paintings at the Royal Academy.
Donor: The Trustees of the British Museum.

47a. Sweet Violet, *Viola odorata*. Engraving probably by W. Kilburn. From Curtis, *Flora Londinensis*, ed. 1, London, 1777-87.
The engravings of the *Flora Londinensis* are amongst the finest illustrations of plants ever published.
William Kilburn (1745-1818), a botanical artist and calico printer of Wallington, Surrey, drew and engraved most of the early plates. (See also No. 50a.) Later artists and engravers were the Welsh artist, Sydenham Edwards, William Milton (d. 1790), James Sowerby and F. Sansom.

47b. Small Bindweed, *Convolvulus arvensis*. Engraving probably by William Kilburn. From Curtis, *Flora Londinensis*, ed. 1, London, 1777-87.

48. Greater Bindweed, *Calystegia sepium*. Drawn and engraved by William Kilburn. From Curtis, *Flora Londinensis*, ed. 1, London, 1777-87.

49. Bugle, *Ajuga reptans*. Engraving from Curtis, *Flora Londinensis*, ed. 1, London, 1777-87.

50a. Heartsease, *Viola tricolor*. Engraving by William Kilburn. From Curtis, *Flora Londinensis*, ed. 2, London, 1817-28.
The original plates of the *Flora Londinensis* were incorporated into the second (enlarged) edition (1817-1828); the text was in great part rewritten and most of the drawings for the two additional volumes made by Sir William Jackson Hooker (1785-1865), the first Director of Kew Gardens and one of the greatest botanists of his time.

50b. Creeping Jenny, *Lysimachia Nummularia*. Engraving from Curtis, *Flora Londinensis*, ed. 2, London, 1817-28.

51a. Round-leaved Fluellen, *Linaria spuria*. Engraving from Curtis, *Flora Londinensis*, ed. 2, London, 1817-28.

51b. Ground Ivy, *Nepeta hederacea*. Engraving from Curtis, *Flora Londinensis*, ed. 2, London, 1817-28.

52. Lady's Slipper Orchid, *Cypripedium Calceolus*. Engraving after a drawing by Sir William Jackson Hooker. From Curtis, *Flora Londinensis*, ed. 2, London, 1817-28.

53. Persian Iris, *Iris persica*. Engraving probably by James Sowerby, being the first plate in *The Botanical Magazine*, Vol. 1, London, 1786.
Curtis's Botanical Magazine, which has continued to be issued periodically down to the present day, comprises in each issue a series of plates of new or noteworthy plants together with brief descriptive letterpress. James Sowerby (1757-1822), who made a large number of the engravings in the first volume of the Magazine is well known also for his drawings in English Botany. (See No. 67, Case D, also Nos. 68-71.)

54. Climbing Cobaea or Violet Ivy, *Cobaea scandens*. Engraving by F. Sansom, after a drawing by Sydenham Edwards. From *Curtis's Botanical Magazine*, Vol. 22, London, 1805.
Sydenham Teast Edwards (1769?-1819) was born at Abergavenny. His copies of figures in the *Flora Londinensis* displayed such promise that William Curtis, to whom they were shown, invited him to London to be taught drawing and engraving. There he made rapid progress and was employed by Curtis to make drawings both for the *Botanical Magazine* and for the *Flora Londinensis*. He later severed his connection with the *Botanical Magazine* and started his own journal, the *Botanical Register* (See Nos. 77-79).
F. Sansom engraved a considerable number of plates for the *Botanical Magazine* from 1792 until 1809, when he became blind, and his son, F. Sansom, Junr., took his place.

55. LAUREL-LEAVED RHODODENDRON, *Rhododendron maximum.* Engraving by F. Sansom, after a drawing by Sydenham Edwards. From *Curtis's Botanical Magazine*, Vol. 24, London, 1806.

56. BARBADOES FLOWER-FENCE, *Caesalpinia pulcherrima.* Engraving by F. Sansom, after a drawing by Sydenham Edwards. From *Curtis's Botanical Magazine*, Vol. 25, London, 1807.

57. INDIAN BEAN, *Catalpa Bignonioides.* Engraving by F. Sansom, after a drawing by Sydenham Edwards. From *Curtis's Botanical Magazine*, Vol. 27, London, 1808.

58. CHANGEABLE WATERLILY, *Nymphaea versicolor.* Engraving by F. Sansom, after a drawing by Sydenham Edwards. From *Curtis's Botanical Magazine*, Vol. 29, London, 1809.

59a. MOURNING-FLOWER ARISTEA, *Aristea melaleuca.* Engraving by F. Sansom, Junr., after a drawing by Sydenham Edwards. From *Curtis's Botanical Magazine*, Vol. 31, London, 1810.

59b. WINTER HELIOTROPE, *Petasites fragrans.* Engraving by F. Sansom, Junr., after a drawing by Sydenham Edwards. From *Curtis's Botanical Magazine*, Vol. 34, London, 1811.

60. LARGE-FLOWERED SOLANDRA, *Solandra grandiflora.* Engraving by H. Weddell, from *Curtis's Botanical Magazine*, Vol. 44, London, 1817.

H. Weddell (fl. 1815-1854) succeeded F. Sansom, Junr., as the engraver for the *Botanical Magazine* in 1815 and continued as such until 1826. He also engraved a large number of plates for other botanical publications.

61. SWEET OLEANDER, *Nerium odorum* var. *carneum.* Engraving by H. Weddell, from *Curtis's Botanical Magazine*, Vol. 46, London, 1818.

62. TREE PEONY, *Paeonia Moutan* var. *papaveracea.* Engraving by H. Weddell, after a drawing by John Curtis. From *Curtis's Botanical Magazine*, Vol. 47, London, 1820.

John Curtis (1791-1862) was famous as an entomologist and more especially for his excellent drawings and engravings of insects. His chief work, *British Entomology* (1824-39) contains 770 plates, many of which include the plants upon which the respective insects feed.

63. AN ORCHID, *Lycaste Deppei.* Engraving by Swan after a drawing by Sir William Jackson Hooker. From *Curtis's Botanical Magazine*, Vol. 62, London, 1835.

Between the years 1826 and 1835 Hooker, in addition to writing the descriptive letterpress for the *Botanical Magazine*, also drew most of the figures. (See also Nos. 50a, 52, and 85.)

64. *Randia Bowieana.* Engraving by Swan from *Curtis's Botanical Magazine*, Vol. 62, London, 1835.

65. CALABASH TREE, *Crescentia Cujete.* Engraving by Swan after a drawing by Mrs. C. Horsfall. From *Curtis's Botanical Magazine*, Vol. 62, London, 1835.

66. *Luculia pinceana.* Engraving by Swan after a drawing by W. H. Fitch. From *Curtis's Botanical Magazine*, Vol. 71, 1845.
Walter Hood Fitch began making drawings for the *Botanical Magazine* in 1834 and continued to do so regularly until 1877, having made about 2,500 drawings in a period of forty-three years. Many of the later plates are in lithography, an art in which Fitch was also skilled. (See also No. 20, Case B, and Nos. 122-128.)

Case D (continued).

67. JAMES SOWERBY AND JAMES EDWARD SMITH, *English Botany*, London, 1790-1814.
The publication of *English Botany* was an event of considerable importance to British botany as a whole and to the art of botanical illustration in particular. The value of the illustrations, of which Sowerby made in all 2,592 for this work alone, is evidenced by the fact that in the current edition, published in 1901, they were not replaced but reproduced by lithography. Even so, comparison with the plates in Smith's *Icones* (See Nos. 69-71) shows that the small size of the page in *English Botany* did not allow the artist to do himself justice.

68. COLUMBINE, *Aquilegia vulgaris.* Engraving after a drawing by James Sowerby (1757-1822). From Sowerby & Smith, *English Botany*, Vol. 5, London, 1796.
Purchased.

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69. CRESCENT-LEAVED PASSION-FLOWER, *Passiflora lunata.* Engraving after a drawing by James Sowerby. From Smith, *Icones pictae plantarum rariorum*, London, 1790-93.
Sowerby's illustrations to Smith's *Icones* surpass even those in *English Botany* (See No. 67 and No. 68, Case D) the larger size of the plate in the *Icones* giving the artist greater scope for his gifts. (See also Nos. 53 and 80-83.)

70. SCARLET-FLOWERED SPURGE, *Euphorbia punicea.* Engraving after a drawing by James Sowerby. From Smith, *Icones pictae plantarum rariorum*, London, 1790-93.

71. *Wachendorfia Paniculata.* Engraving after a drawing by James Sowerby. From Smith, *Icones pictae plantarum rariorum*, London, 1790-93.

72. Strychnine Plant, *Strychnos Nux-vomica.* Engraving after a drawing by William Roxburgh from his *Plants of the coast of Coromandel*, London, 1795-1819.
William Roxburgh (1751-1815) sent home from the East Indies 500 drawings, 300 of which were selected by Sir Joseph Banks, reproduced and published under the above title at the expense of the East India Company.

73. Twining Thunbergia, *Thunbergia fragrans.* Engraving after a drawing by William Roxburgh from his *Plants of the coast of Coromandel*, London, 1795-1819.

74. *Kydia calycina.* Engraving after a drawing by William Roxburgh from his *Plants of the coast of Coromandel*, London, 1795-1819.

75. Double Arabian Jasmine, *Jasminum Sambac.* Engraving by H. C. Andrews (fl. 1794-1830), from his *Botanist's Repository*, London, 1797-1815.
The drawings were made by Andrews himself. In the reproductions the engraving is reduced to a minimum—little more than an outline—and the heavy colouring consequently required gives the pictures an unnaturally stiff and somewhat hard appearance: they therefore lack the charm and delicacy of the engravings in the *Botanical Magazine*.

76. Sweet-scented Flower of Bethlehem, *Ornithogalum odoratum.* Engraving by H. C. Andrews from his *Botanist's Repository*, London, 1797-1815.

77. Trumpet-flowered Bouvardia, *Bouvardia versicolor.* Engraving after a drawing by Sydenham Edwards from his *Botanical Register*, Vol. 3, London, 1817.
The *Botanical Register* was started by Edwards in 1815 in opposition to the *Botanical Magazine* (cf. Nos. 54-59) with which he had severed his connection in the previous year. The *Register* continued to be published until 1847.

78. Straggling Gooseberry, *Ribes divaricata.* Engraving by S. Watts after a drawing by M. Hart. From the *Botanical Register*, Vol. 16, London, 1830.
Donor: Department of Botany, University College, Bangor.

79. Flowering Currant, *Ribes sanguineum.* Engraving by S. Watts after a drawing by M. Hart. From the *Botanical Register*, Vol. 16, London, 1830.
Donor: Department of Botany, University College, Bangor.

80. Black-spined Nightshade, *Solanum sodomeum.* Engraving by James Sowerby, after a drawing by Ferdinand Lucas Bauer. From Sibthorp & Smith, *Flora Graeca*, Vol. 3, London, 1819.
Ferdinand Lucas Bauer (1760-1826), an Austrian artist, came to England as a young man with his brother Franz Bauer; he accompanied Sibthorp on his expedition to Greece, from which the *Flora* resulted. Remarkable for their beauty and botanical fidelity, Ferdinand Bauer's drawings have rarely been surpassed. Ferdinand returned to Austria but his brother, also a botanical artist of repute, remained in England, becoming attached to Kew Gardens.

81. A PINK, *Dianthus diffusus*. Engraving by James Sowerby after a drawing by Ferdinand Lucas Bauer. From Sibthorp & Smith, *Flora Graeca*, Vol. 4, London, 1823.

82. EVENING CATCHFLY, *Silene vespertina*. Engraving by James Sowerby after a drawing by Ferdinand Lucas Bauer. From Sibthorp & Smith, *Flora Graeca*, Vol. 5, London, 1825.

83. MYRTLE, *Myrtus communis*. Engraving by James Sowerby after a drawing by Ferdinand Lucas Bauer. From Sibthorp & Smith, *Flora Graeca*, Vol. 5, London, 1825.

84. AN ORCHID, *Sarcanthus praemorsus*. Engraving by H. Weddell after a drawing by John Lindley. From Lindley, *Collectiana botanica:* or Figures and botanical illustrations of rare and curious exotic plants, London, 1821.

John Lindley (1799-1865) was famous for his work on taxonomic and fossil botany.

Donor: Department of Botany, University College, Bangor.

85. AN ORCHID, *Catasetum Hookeri*. Engraving by H. Weddell after a drawing by Sir William Jackson Hooker. From Lindley, *Collectiana botanica*, London, 1821. (See also Nos. 50a, 52, and 63).

Donor: Department of Botany, University College, Bangor.

86. LODDIGES' CATTLEYA, *Cattleya Loddigesii*. Engraving by H. Weddell, after a drawing by Barbara Laurence. From Lindley, *Collectiana botanica*, London, 1821.

Donor: Department of Botany, University College, Bangor.

87a. EVENING-SCENTED ROCKET, *Hesperis fragrans*. Engraving by A. Bailey after a drawing by Edwin Dalton Smith. From Sweet, *British Flower Garden*, London, 1823-29.

A large number of illustrations by Edwin Dalton Smith (fl. 1823-46 ?) are to be found in the various botanical and horticultural periodicals of this period, notably in Maund's *Botanic Garden* (1825-36). (See also No. 94.)

87b. EVENING CATCHFLY, *Silene vespertina*. Engraving by A. Bailey after a drawing by Edwin Dalton Smith. From Sweet, *British Flower Garden*, London, 1823-29.

88. PURPLE BELL-VINE, *Rhodochiton volubile*. Drawn and engraved by Frederick W. Smith. From Paxton's *Magazine of Botany*, London, 1834-49.

89. THREE-LOBED BIRTHWORT, *Aristolochia trilobata*. Drawn and engraved by Frederick W. Smith. From Paxton's *Magazine of Botany*, London, 1834-49.

90a. BOWIE'S OXALIS, *Oxalis Bowiei*. Engraving after a drawing by R. Mills. From Maund, *The Botanist*, London, 1836-42?

Mills made about 60 drawings for this work and also took a chief part in illustrating Knowles & Westcott's *Floral Cabinet* (1837-40).

90b. CRISPED-FLOWERED ONCIDIUM, *Oncidium crispum.* Engraving from a drawing by Miss Taylor. From Maund, *The Botanist*, London, 1836-42 ?
Miss Taylor made about 23 drawings for this work.

91. COMMON LIME, *Tilia europaea.* Engraving by W. Willis after a drawing by Russell. From Baxter, *British Phaenogamous Botany*, ed. 2, Oxford, 1834-43.
Isaac Russell (fl. 1820-43), botanical artist and glass painter, drew over 200 plates for Baxter's work. His figures equal in merit many of Sowerby's plates in *English Botany*, and sometimes even excel them. (Cf. 67, Case D.) The detailed dissections of the floral parts are often extremely accurate.

92. TULIPS, *Tulipa sp.* Engraving from the *Florists' Magazine*, 1836.

93a. GERANIUM, *Pelargonium sp.* Engraving by Alfred Adlard from the *Florists' Journal*, about 1843.

93b. *Martynia fragrans.* Engraving by Alfred Adlard from the *Florists' Journal*, 1843.

94. IRIS, *Iris amoena.* Engraving by H. Weddell after a drawing by Edwin Dalton Smith. From Sweet, *Ornamental Flower Garden*, 1854.
(See also No. 87.)

MEZZOTINT ENGRAVINGS

95. NIGHT FLOWERING CACTUS, *Cereus grandiflorus.* Mezzotint engraving by R. Dunkarton after a painting by P. Reinagle and A. Pether. From Thornton, *Temple of Flora*, London, 1799-1809.
Robert John Thornton (1768 ?-1837), botanist and physician, conceived his *Temple of Flora* on a grand scale and employed some of the best known artists and engravers of his day to produce the illustrations.
Robert Dunkarton (fl. 1770-1811) was chiefly known as an engraver of mezzotint portraits; Philip Reinagle (1749-1833) who painted the flower for the plate exhibited, was an animal and landscape painter; whilst Abraham Pether (1756-1812), who was responsible for the moonlit landscape in the background, had a reputation as a painter of such subjects.
Cf. line engraving of the same plant (No. 37).

96. AMERICAN TURK'S-CAP LILY, *Lilium superbum.* Mezzotint engraving by R. Earlom after a painting by P. Reinagle. From Thornton, *Temple of Flora*, London, 1799-1809.
Richard Earlom (1743-1822) was one of the foremost mezzotint engravers of his day and his engravings are masterly examples of technical skill. He is especially known for his groups of flowers after Van Huysum and Van Os.
Cf. line engraving of the same plant (No. 41).

97. WHITE LILY, *Lilium candidum.* Mezzotint engraving by Stadler after a painting by Henderson. From Thornton, *Temple of Flora*, London, 1799-1809.
Henderson also made the drawings for Thornton's *New Family Herbal* (See No. 19, Case B).

98. TULIPS, *Tulipa sp.* Mezzotint engraving by Richard Earlom after a painting by Philip Reinagle. From Thornton, *Temple of Flora*, London, 1799-1809.

STIPPLE ENGRAVINGS

99. PRICKLY PEAR, *Opuntia Tuna.* Stipple engraving after a drawing by Redouté. From A. P. De Candolle, *Plantarum historia succulentarum*, Paris, 1799-1829.
Pierre Joseph Redouté (b. Pays de Liége 1759, d. Paris 1840) was court painter to the French Royal Court and, after the Revolution, to the Empress Josephine. In 1792 he was appointed artist to the Académie des Sciences. The many drawings which he made for the present and other works stand unapproached for both design and execution; they are remarkable in particular for their charm and delicacy, characteristics which the method of stipple engraving retains to a high degree.

100. HORSE CHESTNUT, *Aesculus Hippocastanum.* Stipple engraving after a drawing by P. J. Redouté. From Du Hamel du Monceau, *Arbres et arbustes*, Paris, 1801-19.

101. TEA PLANT, *Camellia Thea.* Stipple engraving after a drawing by P. J. Redouté. From Du Hamel du Monceau, *Arbres et Arbustes*, Paris, 1801-19.

102. MARYLAND MOORWORT OR STAGGER-BUSH, *Pieris mariana.* Stipple engraving after a drawing by P. J. Redouté. From Du Hamel du Monceau, *Arbres et arbustes*, Paris, 1801-19.

103. WHITE JASMINE, *Jasminum officinale.* Stipple engraving after a drawing by P. J. Redouté. From Du Hamel du Monceau, *Arbres et arbustes*, Paris, 1801-19.

104. SPIKE LAVENDER, *Lavandula spica.* Stipple engraving by Louis Gabriel after a drawing by P. J. Redouté. From Du Hamel du Monceau, *Arbres et arbustes*, Paris, 1801-19.

105. DAME'S VIOLET, *Hesperis matronalis.* Stipple engraving after a drawing by P. J. Redouté for his edition of *La Botanique de Jean Jacques Rousseau*, Paris, 1805.
Jean Jacques Rousseau (1712-1778) is better known as a novelist and thinker than as a botanist.

106. RED CLOVER, *Trifolium pratense.* Stipple engraving after a drawing by P. J. Redouté for his edition of *La Botanique de Jean Jacques Rousseau*, Paris, 1805.

107. Common Daisy, *Bellis perennis.* Stipple engraving by Jean Joseph François Tassaert (1765-c.1835), after a drawing by P. J. Redouté for his edition of *La Botanique de Jean Jacques Rousseau*, Paris, 1805.

108. Ivy-leaved Toadflax, *Linaria Cymbalaria.* Stipple engraving after a drawing by P. J. Redouté, for his edition of *La Botanique de Jean Jacques Rousseau*, Paris, 1805.

109. Quince, *Pyrus Cydonia.* Stipple engraving by A. Bouquet after a drawing by P. J. Redouté for his edition of *La Botanique de Jean Jacques Rousseau*, Paris, 1805.

110. *Melastoma nivea.* Stipple engraving by A. Bouquet after a drawing by P. J. F. Turpin. From Humboldt and Bonpland, *Monographia Melastomacearum, I. Melastomae*, Paris, 1816.

Bouquet also engraved many of Redouté's drawings, whence the similarity in style exhibited by some engravings after Redouté and Turpin respectively. Pierre Jean François Turpin (1775-1840), a well known French botanical artist, is said to have made upwards of six thousand drawings, which were engraved by Bouquet, Scellier, Plée and others.

111. *Rhexia reticulata.* Stipple engraving by A. Bouquet after a drawing by P. J. F. Turpin. From Humboldt and Bonpland, *Monographia Melastomacearum, II. Rhexiae*, Paris, 1823.

112. *Rhexia rotundifolia.* Stipple engraving by A. Bouquet after a drawing by P. J. F. Turpin. From Humboldt and Bonpland, *Monographia Melastomacearum, II. Rhexiae*, Paris, 1823.

113. Loquat, *Eriobotrya japonica.* Stipple engraving: drawn and engraved by William Hooker. From the *Transactions of the Horticultural Society*, Vol. 3, 1820.

William Hooker (1779-1832), a pupil of Franz Bauer, was official artist to the Horticultural Society and made drawings and engravings for many botanical and horticultural periodicals. The majority of his engravings for the Society were in stipple. One interesting feature of his plates is the use of a kind of irregular network of lines for the more heavily shaded parts. William Hooker appears not to have been connected with Sir William Jackson Hooker.

114. Quill-flamed Yellow Chrysanthemum, *Chrysanthemum sinense* var. Stipple engraving: drawn and engraved by William Hooker. From the *Transactions of the Horticultural Society*, Vol. 4, 1821.

115. Pott's Wax-plant, *Hoya Pottsii.* Stipple engraving by William Clark after a drawing by Mrs. Withers. From the *Transactions of the Horticultural Society*, Vol. 7, 1830.

Mrs. Withers (fl. 1831-64) was flower painter in ordinary to Queen Adelaide and long held a conspicuous place amongst the illustrators of botanical and horticultural periodicals.

LITHOGRAPHS

116. A BEGONIA, *Begonia incarnata.* Lithograph by J. Graf, after a drawing by A. Green. From Knowles and Westcott, *Floral Cabinet*, London, 1837-40.

117. IXIAS, *Ixia spp.* Lithograph from J. W. Loudon, *Ladies' Flower Garden*, 1841.
The arrangement of the plants in a loose bouquet is characteristic of the popular botanical works of a century ago.

118-121. FUNGI. Lithographs after drawings by Mrs. A. M. Hussey from her *Illustrations of British Mycology*, London, 1847-55.
Purchased.

122. *Napoleona imperialis.* Lithograph by Walter Hood Fitch. From *Curtis's Botanical Magazine*, Vol. 74, 1848.
Fitch's lithographs from his own drawings are characterized by the skill with which he seized the essential features of his plants, his keen sense of form and the artistry, reminiscent of the early woodcuts, with which he arranged his subject within the rectangular borders of the print. (Cf. also No. 20, Case C, and No. 66.)

123. AN ORCHID, *Sobralia macrantha.* Lithograph by Walter Hood Fitch. From *Curtis's Botanical Magazine*, Vol. 75, 1849.

124. WALLICH'S LILY, *Lilium Wallichianum.* Lithograph by Walter Hood Fitch. From *Curtis's Botanical Magazine*, Vol. 77, 1851.

125a. MADDEN'S RHODODENDRON, *Rhododendron Maddenii.* Lithograph by Walter Hood Fitch. From *Curtis's Botanical Magazine*, Vol. 80, 1854.

125b. MANGOSTEEN, *Garcinia Mangostana.* Lithograph by Walter Hood Fitch. From *Curtis's Botanical Magazine*, Vol. 81, 1855.

126. FALCONER'S RHODODENDRON, *Rhododendron Falconeri.* Lithograph by Walter Hood Fitch after a drawing by Joseph Dalton Hooker from his *Rhododendrons of Sikkim Himalaya*, London, 1849-51.
Sir Joseph Dalton Hooker (1817-1911), son of Sir William J. Hooker, was at the time of his death the most famous botanist in Britain if not in the world. Like his father, he was an accomplished artist. *Rhododendrons of Sikkim-Himalaya* was one of the results of his expedition to the Eastern Himalaya in 1848, the first made to that region after Turner's embassy to Tibet in 1789. Sir Joseph Hooker succeeded his father both as Director of Kew (1865-1885) and as editor of *Curtis's Botanical Magazine.*

127. WALLICH'S RHODODENDRON, *Rhododendron Wallichii.* Lithograph by Walter Hood Fitch after a drawing by Joseph Dalton Hooker from his *Rhododendrons of Sikkim Himalaya*, London, 1849-51.

128. WIGHT'S RHODODENDRON, *Rhododendron Wightii.* Lithograph by Walter Hood Fitch after a drawing by Joseph Dalton Hooker from his *Rhododendrons of Sikkim Himalaya*, London, 1849-51.

129. IVY, *Hedera Helix*. Drawn and lithographed by W. G. Smith. From Hogg & Johnson, *Wild Flowers of Great Britain*, London, 1861-80.
W. G. Smith's illustrations for this book were his earliest botanical work. (Cf. also No. 23.)

130. GESNERA, *Gesnera exoniensis*. Drawn and lithographed by James Andrews (1801 ?-1876). From the *Floral Magazine*, London, 1868.

131. LOW'S SLIPPER ORCHID, *Cypripedium Lowii*. Drawn and lithographed on zinc by C. T. Rosenberg. From Moore & Ayres, *Magazine of Botany*, London, 1850-51.

132. *Broughtonia lilacina*. Drawn and lithographed on zinc by C. T. Rosenberg. From Moore and Ayres, *Magazine of Botany*, London, 1850-51.

133. *Medinilla magnifica*. Drawn and lithographed on zinc by L. Constans. From Lindley & Paxton, *Flower Garden*, London, 1851-53.

134. RUBY-LIPPED CATTLEYA, *Cattleya labiata*. Drawn and lithographed on zinc by L. Constans. From Lindley and Paxton, *Flower Garden*, London, 1851-53.

135. THE ROYAL WATERLILY ON THE RIVER AMAZON, *Victoria Regia*. Colour lithograph after a painting by Ernst Heyn (b. Leipzig 1841). From Kerner & Oliver, *Natural History of Plants*, London, 1894-5.
Purchased.

136. WEST INDIAN ORCHIDS, *Oncidium Papilio* and *Stanhopea devoniensis*. Colour lithograph after a painting by Ernst Heyn. From Kerner and Oliver, *Natural History of Plants*, London, 1894-5.
Purchased.

Case E.

137. THOMAS MOORE, *The Ferns of Great Britain and Ireland*, London, 1855.
The plates in this and the two following works were "nature printed" by Henry Bradbury.
Donor: John Grimes, M.B.E.

138. THOMAS MOORE, *The Nature Printed British Ferns*, Vol. 1, London, 1859.

139. W. G. JOHNSTONE AND A. CROALL, *Nature Printed British Seaweeds*, Vol. 1, London, 1859.
Nature printing, invented by Henry Bradbury (d. 1860), consisted in placing the object to be copied, a fern frond or a seaweed, between plates of steel and lead and subjecting them to hydraulic pressure, with the result that the plant left an indented impression in the lead. The lead plate was electroplated to give it a hard surface, details and lettering were added by hand and impressions were taken as from an ordinary engraved plate, usually in the colour of the plant depicted. The drawback to the process was that only such plants as were capable of withstanding heavy pressure could be reproduced. The process did not survive its inventor.

PHOTO-MECHANICAL REPRODUCTIONS

Case F.

140. C. E. Moss, *The Cambridge British Flora*, Vols. 2 and 3, Cambridge, 1914-20.
The plates after drawings by E. W. Hunnybun (1848-1918) are reproduced by line process.

141a. Royal Fern, *Osmunda regalis.* Print from a line process reproduction of a pen and ink drawing by E. A. Jenkins. From Hyde & Wade, *Welsh Ferns*, Cardiff, 1940.

141b. Wilson's Filmy Fern, *Hymenophyllum peltatum* and Tunbridge Filmy Fern, *H. tunbrigense.* Print from a line process reproduction of a pen and ink drawing by E. A. Jenkins. From Hyde & Wade, *Welsh Ferns*, Cardiff, 1940.

142. Floating Bur-reed, *Sparganium simplex.* Photograph reproduced by half-tone process.

143. Woolly-bearded Protea, *Protea barbigera.* Three-colour process reproduction of a water-colour drawing by D. Barclay.
This and the following form part of a series of pictures published by the Wild Flower Protection Society of South Africa.
Donor: The late H. Edgar Salmon.

144. Oval-leaved Protea, *Protea grandiceps.* Three-colour process reproduction of a water-colour drawing by D. Barclay.
Donor: The late H. Edgar Salmon.

145a. Bleeding Heart, *Dicentra spectabilis.* Collotype reproduction of a water-colour drawing.

145b. Marvel of Peru, *Mirabilis Jalapa.* Collotype reproduction of a photograph.

145c. Primrose, *Primula vulgaris.* Collotype reproduction of a photograph.

146. Lady's Slipper Orchid, *Cypripedium Calceolus.* Collotype reproduction of a water-colour drawing by Erich Nelson. From Fischer, *Die Orchideen Deutschlands*, Munich, 1931.

147. *Serapias vomeracea*; Spider Orchis, *Ophrys fuciflora*; and Bee Orchis, *Ophrys apifera.* Collotype reproduction of a water-colour drawing by Erich Nelson. From Fischer, *Die Orchideen Deutschlands*, Munich, 1931.

148. Purple Helleborine, *Epipactis purpurata* and Marsh Helleborine, *Epipactis palustris.* Collotype reproduction of a water-colour drawing by Erich Nelson. From Fischer, *Die Orchideen Deutschlands*, Munich, 1931.

149. Grass of Parnassus, *Parnassia palustris.* Reproduction of a photograph by photogravure.

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This is an alphabetical register of representations of flowering plants and ferns in botanical and horticultural publications from the eighteenth century to the present day.

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